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To: Mr. D. Mills
Director of Research

YEAR-END REPORT FOR 1985 - DIVISIONAL PROJECTS DEPARTMENT

G.R. Floyd

1. INTRODUCTION

The Divisional Projects Department engages in several distinct areas of work. Although each area is different from the next in terms of work content, all of the Department's endeavours are directed toward providing support for the Research Division's activities.

The first area of work involves the research planning process and the development and support of management systems. Activities include participation in Research Program Advisory Committees, development of program selection, management and evaluation techniques, the design of performance measures, and the study of various issues central to the Division's business.

The second area of activity, which has grown in importance in recent years, is Directorate Support. Work in this area includes formulation of the Director's performance measures, participation in the development of the Branch Management System, and preparation of material for presentations to upper management.

The third area of effort for the Divisional Projects Department involves the provision of certain information services to the Division. In particular, Divisional Projects' mandate involves the interface between the Division and groups external to the Corporation. The work involves arranging tours and seminars, looking after the production of publications such as the Research Annual Report, the Research Review, the Services and Capabilities Brochure, and REDIFAX.

The Department also provides support for the Division's external contract activities. Work in this area includes the provision of various guides for writing proposals and administering contracts, provision of information on contract opportunities,

and production of financial reports for use by Research Division management.

Special Studies, the other area of activity for the Department is concerned with the identification and fostering of research opportunities in new areas and with the coordination of collaborative research activities within the Division as well as with external organizations.

This report is organized in two major sections, "Research Program" and "Special Studies". The first section is subdivided into "Management Support", "Directorate Support", and "Communications".

2. RESEARCH PROGRAM

2.1 Management Support

AI Awareness: User group meetings have been organized and an AI newsletter has been established. Circulation of the newsletter has risen with each issue and now stands at about eighty. Both this and reader feedback indicate that it has been favourably received.

Notable Accomplishments List: An update of the "Notable Accomplishments" report issued early in 1984 has been undertaken and was about 80% complete at year end. The update should be completed early in 1986. The results will be published in a memorandum with a limited distribution. The next full report will not be issued until 1988.

Cross-Impact Coding: A cross-impact algorithm suitable for application to forecasting in a business environment has been coded and successfully executed on an IBM PC. Operating instructions and several run examples have been documented to ensure rapid availability of the technique for future forecasting use in the Division.

Branch Management Implementation: Assistance has been given in implementing the Branch Management System in the Research Division. This has involved the definition of products, objectives and key effectiveness areas for the Division.

Patenting and Licensing: Work continued in support of corporate efforts to develop improved methods of patenting and licensing. Reports were prepared on the costs and benefits of patent protection and of licensing technology.

Membership was continued on a task force responsible for revising the corporate policy on patenting of employees' inventions.

Catalogue of Expertise: A Catalogue of Expertise was developed and a copy was issued to each Department and Section in the Division. The catalogue lists the expertise areas of the professional and technical staff in the Division and identifies those individuals claiming competence in the various areas. The catalogue also gives a crude estimate of the individuals' level of ability in those areas for which they have claimed expertise.

External Contracts: The Department continued to provide support for the Division's external contract activities. Work involved producing financial reports for management, providing assistance to personnel in the preparation of contract proposals, interfacing with the Law Division in matters dealing with contracts, letters of agreement and the like, and monitoring opportunities for new contracts and making appropriate staff aware of them.

Liaison Activities: The Department maintains links with organizations such as EPRI, the Ministry of Energy, and universities in Ontario as well as with New Business Ventures Division and the Marketing Branch. In 1985, the Department undertook the establishment of better links with other research organizations around the world. Responsibilities for maintaining these links was assigned to senior Research staff.

2.2 Directorate Support

The Department provided support to the Director of Research in the following areas.

Provision of Information to External Groups: At the request of the Chairman, information was provided to McKinsey & Co for use in a study of Canadian research and development work. Responses to similar questionnaires from the Science Council of Canada and the Financial Post were also prepared. Arrangements were made for EXPO '86 personnel to film Research Division work for an Ontario Government film production.

Production of Material for the Director's Use: Material was prepared for the Chairman of the Edison Electric Institute in order to facilitate the visit to the Division by the Institute's management board. Material was prepared for the Power System Program Management System Committee, and for the Director's presentations to the Technical Advisory Committee of the board

and the AMEU. Assistance was given to the Power System Program Branch Vice-President in the preparation of a presentation to the IEEE. The manager of Divisional Projects represented Ontario Hydro on the Advisory Board of the CIDA China Project and organized the agenda and schedules for the Research Advisory Committee meetings.

Support for the Director's Initiatives: Assistance was provided in the design and implementation of an awards program for the Research Division. An awards process, which includes the definition of the awards, the method for determining candidates, and the criteria for selection of the winners, was developed. The award plaques and award certificates for the winners were designed and produced. A fifteen-years' service pin was also designed and fabricated in sterling silver. It is awarded each year to all those who complete fifteen years with the Research Division.

Divisional Communications: Several noon-time Director's Dialogues and one Vice-President's Dialogue were arranged.

2.3 Communications:

Divisional: The Divisional Projects Department fostered communications within the Division by continuing to publish Chit-Chat, the Division's employee newsletter, and by facilitating noon-hour sessions of Director's Dialogues with the staff.

Interdivisional: The Department issued a report entitled "Technology Transfer from the Research Division to Industry". It describes the role the Division has played in supporting Canadian industry by transferring technology developed in the laboratory to Canadian companies. Six major mechanisms by which technology can be transferred were identified and numerous examples of successful transfers during the 75 years of the laboratory's operations were described.

External: The Divisional Projects Department managed the production of the 1984 Research Annual Report. This publication has won three top awards in Canadian technical publishing competitions as well as an award at the International Society for Technical Communication competition. A new publication, REDIFAX was initiated in 1985. It is designed to summarize results of Research Division work in a fashion which is usable by non-technical readers. The first issue, "Understanding your Air-Conditioner", was very well received by readers both inside and outside of Ontario Hydro. More issues on a variety of

topics are planned for 1986. The production of a video to mark the 75th Anniversary of the inception of the Research Division (1912-1987) was initiated. The video will highlight the accomplishments of the Research Division during its 75-year history and will be available to both Ontario Hydro and external groups.

3. SPECIAL STUDIES

The special studies group was involved in many different projects during 1985. Brief descriptions of these are given below.

Plasma R&D Facility: A second plasma R&D facility is being developed. The new facility is located adjacent to Lakeview TGS and features a dc power supply which can be used to power plasma torches up to 250 kW. A 150-kW torch, jointly owned with the Ministry of Energy, is being installed.

Advanced Ceramics: An Advanced Ceramics Working Group has been established at the Research Division. A number of collaborative projects with Ontario-based industry have been undertaken in 1985. The majority have made use of the Division's 180-kW Thermal Plasma Laboratory and its powder injection system.

Plasma Processing of MSW: A collaborative project with Resorption Canada was organized. The project will examine the feasibility of utilizing plasma pyrolysis of Municipal Solid Waste (MSW) to recover energy in the form of combustible gases and to reduce toxic-stack emissions.

R&D Support for EV Technology: Assistance to Powerplex Technologies' sodium-sulphur electric vehicle program was organized. The support is in the form of an "in-kind" contribution which is underwritten by both the Research Division and Marketing Branch.

Isotope Separation Technology: Research Division activity in the area of isotope separation was stimulated by a technical paper in which the benefits possible by depletion of the Zr-91 isotope in terms of new design flexibility for CANDU fuel channels was outlined. More conservative designs with thicker-walled components and reduced hydrogen concentrations are possible through depletion of Zr-91 in pressure-tube alloys.

LB Project: Research Division involvement in an R&D program which has been proposed to develop a new iron-making technology was organized. The LB Project, which will involve Steloo and McMaster University, will be hosted in the Lakeview Plasma R&D Facility if NSERC funding can be obtained. The Research Division's contribution is valued at $500 K for this $3-M project.

Approved:

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